will be a tendency to crowd against the next one already driven. To prevent splitting while driving, the tops should be protected with an iron ring; the piles are driven far enough below the grade of the bottom of foundation so that no outward pressure can break them below the bottom ranger. As the excavation is carried down, these rangers are put in at a distance of 5 or 6 ft. apart and the bracing from side to side done on them. Although this is only a temporary structure, all the piles should be new and sound, as they are subjected to severe strain where if extracted, while shaky timber would cause trouble and perhaps cripple the sheeting, besides being useless after extraction.

Where any large amount of sheet piling is done, the steam hammer is the best driver to use, or if this type is not available, the ordinary pile-driver with falling weight can be used to advantage. The hammer should be lighter than that for driving bearing piles. Where the work is not very large, the piles may be driven with heavy beetles or mauls, but this method is extremely slow for thick sheeting. When driving by steam, a good many light blows of the hammer is better than a few heavy ones and the practice is not so apt to cripple the planks.

In commencing construction of a building it is customary to cut the trench around for the outside walls, leaving the earth which comes inside the building for. the support of the sheeting until the walls are built and set enough to receive the outside pressure.

Cofferdams.—These are built for the exclusion of water while work is being done. The kind employed depends upon the nature and extent of the work, and the strength should be somewhat in proportion to the amount of damage or delay from failure. As the space and amount of puddling material are usually limited, the best and usual form will be a bank of puddle enclosed and supported by a row of sheet piling on each side. Experience has shown that 4 to 6 ft. is sufficient for the puddle to exclude the water; but unless the dam is supported independently, its width must be in proportion to the depth of water, so that it will not be overturned. Good timber should be used here as in ordinary sheet piling and for the same reasons. Where there is room, a bank of sand against the inside sheeting will assist in supporting the dam.

Single-sheeted dams are sometimes used successfully. They are made from planks, tongued and grooved, or carefully caulked, but they can only be used successfully where the soil is not of a flowing nature; otherwise, when the pressure is relieved from the inside, the flow will start under the bottoms of the sheeting and render the dam useless. This sort of dam should never be trusted where its failure would cause much damage or expensive delay. A double dam will, in nearly all cases, pay for itself.

Bag Dams.—Where the depth of water is not great, bag dams can be used to advantage. They can be cheaply and quickly constructed, and in some cases are almost indispensable. They can be used for shear dams for turning water away from foundations, especially where sheet piling cannot be driven, for repairing breaks in banks and for many other purposes. They are made from strong empty cement bags or gunny sacks filled with sand or other suitable material and securely tied and deposited in the place where they are to be used.

Disposal of materials of excavation should be made in the cheapest and quickest manner. If by carts, and the inclination is not too great, a run should be made from the surface to the bottom of the excavation, and the carts backed down and filled. If by wheelbarrows, the run should be the same. If loaded into cars on a side track, the material may, on any sizable job, be hoisted by derricks operated by steam power, in scales, and dumped into the cars. If it is impossible to load carts in the excavation itself, they may be loaded in the same manner as the cars. In excavating the trenches in soft material the hoisting method must be used. Where the amount of excavation is large, steam shovels can be used to advantage.

Material to be used again for backfilling should be put in a convenient place, and backfilling should be begun as soon as possible, to protect the foundation from the weather and for convenience in working.

Piling.—Where the depth of good bottom is too great to be reached economically by the foundations, approximately 10 ft. or more, it becomes necessary to use piles. The determination of the type of piles depends upon local conditions. If it is necessary to spread the load over as much area of the underlying land stratum as possible, wood piles should probably be used. If it is not necessary to spread the load, a fewer number of concrete piles with higher bearing value can be used. If the ground water is comparatively low down, it may be much more economical to use concrete piles and carry the foundations down to the ground water level than to use wood piles.

The kind of wood to use for piles is governed by the kinds which are obtainable at the location under consideration and the character of the soil through which it is to be driven. Soft wood, like spruce and white pine, can be driven into soft soils safely, but in hard soils there is danger of brooming the points or crippling the pile, and oak, southern pine or some hard wood should be used. As stated above, an exploration of the site should be made by borings in order to design properly the pile work.

The driving is done by either a drop hammer or a steam hammer. In sandy soils and soils containing gravel the driving can be assisted by the use of a water jet. The final blows to test the rate of penetration should be made after the water is shut off. Indication of overdriving is shown by the bouncing of the hammer and by bending and kicking. The length and size of the piles and character of the soil determine the weight and drop of the hammer.

John Millen & Son, Limited, of Montreal, have sold stock, assets and goodwill of their railway and supply department ager of the department for the past nine years. Mr. Lyman will carry on the business under the firm name of Lyman & Lyman, Limited, with offices at Montreal and Toronto.

The Dominion Chain Company, with Dominion charter, has increased its capital stock from \$50,000 to \$500,000; the North American Chemical Company, Limited, with Dominion charter, from \$30,000 to \$100,000; Ford Motor Company, Limited, with Dominion charter, from \$1,000,000 to \$10,000,000; Soulanges Rural Telephone Company, with Quebec charter, from \$5,000 to \$10,000.

British Columbia has produced \$73,269,603 of placer gold, \$81,595,516 of lode gold, \$37,709,282 of silver, \$31,468,462 of lead, \$86,939,370 of copper, and \$149,814,462 of coal and coke ; \$26,026,050 other metals and building-stone, etc., a total pro-\$26,388,825. Lode mining has only been in progress for been even prospected; 250,000 square miles of unexplored, mineral-bearing land are open for prospecting.